

REMARKS

Record is made of a conference had with the Examiner in charge of this application and this opportunity is taken to thank the Examiner for all of the courtesies extended by her to the applicant's attorney at the said conference. At the conference, applicant's attorney advised the Examiner that she had prepared an amendment limiting all of the claims to laser sintering utilizing powders as the sinter material and that she had further argued the distinction between the claims and the art as cited and applied by the Examiner. The Examiner was asked if she would consider a "faxed" copy of the aforesaid amendment and provide her comments with respect to allowance of any of the claims presented. The Examiner said that she thought that any amendment to be so submitted should include further attention to the "controller" feature. The claims as now submitted include further reference to the controller and its function in the system.

Claims 2, 3-10 and new claim 41 are pending in this application.

Claims 1-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heugel (WO 2004/014636A1) in view of Manuel, et al. (US 6,587,742). The Examiner cited Heugel (US 2005/0263932A1) as the English-language equivalent of the PCT publication in issue. Applicant respectfully requests reconsideration of this rejection.

In formulating the rejection, the Examiner relies on Heugel as teaching a tool chamber enclosing a sinter material, a laser system sintering said sinter material as a function of controller signals (item 21 – figure 1) wherein a controller generates signals to control the sintering and fabrication of multiple three-dimensional objects (paragraphs

0013-0014). The Examiner admits that Heugel failed to teach that the specific controller used generates controller signals as a function of a predetermined tool design and failed to teach the elements of the tool sections, and relied on Manuel to overcome the deficiencies.

First, the applicant is not aware of any reference in Heugel to a controller that controls the laser system item 21 or any controller signals thereof. The only control device read by the applicant in Heugel controls the switch device that dictates the chamber to which the laser beam is to be directed.

The switch device 22 of Heugel, in the case where the radiation source 21 is a laser, the same is arranged outside of the process chambers 11 and 12 (there are two process chambers spatially separated from each other). The laser beam is supplied to one process chamber 11 or to the other process chamber 12 via a switch device 22 formed to be a beam switch. The “laser beam is supplied to the beam switch via a light conducting fibre or via light conducting cables which are selectably connectable to it. In this way, the process chambers are each fixedly connected to the laser via light conducting fibres or via light conducting cables. However, the switch device 22 may also be formed to be a switchable optical element, particularly a mirror, where the laser beam propagates freely” (paragraph 0015 of Heugel) (see claim 1).

Heugel does not teach or suggest the instant invention. Manuel adds nothing further to Heugel. First, Manuel is directed to a method and an apparatus for creating an object by selecting materials having a thickness, laser-cutting said material into the design of a section of the object, and bonding all the sections to form the object. The building blocks involved are not laser-fusible powder but are sheets of materials with a

thickness. In particular, Manuel recites the “material may comprise steel” (column 5, line 47) which is certainly fit for the laser-cutting process but unsuitable for laser sintering. The manner in which a section is produced is not by bonding the fusible powder into a constituent layer but by cutting the sheet of material into a desired shape. In other words, Manuel is not related to laser sintering. *See* column 5, lines 40-47 of Manuel.

The Examiner admits that Heugel does not teach that the specific controller used generates controller signals as a function of a predetermined tool design, said predetermined tool design comprising a first section of said tool comprising a joint component for coupling said first section to at least one other section of said tool and thus, Heugel fails to teach that the parts fabricated in each chamber are a function of one tool design, such that the parts are to be matched and subsequently joined to build the tool design generated by the controller. The Examiner continues that Heugel also fails to teach the elements of the tool sections such that the first section is sintered separately from the second section, wherein the tool design comprises joint components on both sections, wherein the tool sections’ joint components define holes, tongue features or contour details which allow the individual sections to be combined subsequent to sintering and has concluded that Manuel would supply the missing teachings.

It should be noted that the Examiner admits that though Manuel, et al. may not teach that the tool design comprises joint components, receiving areas, holes or tongues such that these elements are used to couple together sections of the tools, such areas are obvious variations and dependent upon the actual tool being fabricated, and its design and components. In essence, the Examiner has admitted both Heugel and Manuel fail to teach the tool designs comprises joint components, receiving areas, holes or tongues, and

simply opined that such designs are obvious without any support therefor in the cited references. The assumption of obviousness is therefore deemed improper by the applicant.

The skilled in the art would not look to Manuel (laser cutting) for solutions to a problem involving laser sintering.

Therefore, the rejection of claims 1-6 and 9-10 should be withdrawn.

The Examiner rejected claims 7-8 under 35 U.S.C. 103(a) as being unpatentable over Heugel in view of Manuel, et al. and further in view of Masters (US 5216616). The Examiner stated that “Heugel and Manuel, et al. teach the characteristics previously described but do not teach that the tool is comprised of a heat sink positioned within said tool chamber or a buffer feature protecting said joint component” and relied on Masters to overcome the deficiencies. Applicant respectfully requests reconsideration of this rejection.

As argued above with respect to claims 1-6 and 9-10, Heugel and Manuel, either considered individually or in combination, fail to teach what the Examiner has relied on them to teach.

Further, the applicant is unable to locate any reference to a heat sink or an equivalent thereof in Masters, either in the cited passages (col. 2, lines 22-27 and col. 6, lines 8-35) or the rest of the paper, and it is the applicant's position that such heat sink reference does not exist.

Therefore, the rejection of claims 7-8 should be withdrawn.

SUMMARY

It is submitted that in view of the above, all of the claims in the application are allowable to applicants and notification to this effect is respectfully requested.

Respectfully Submitted

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